=> FILE REG
FILE 'REGISTRY' ENTERED AT 14:58:55 ON 21 NOV 2006
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=> FILE HCAPLU
FILE 'HCAPLUS' ENTERED AT 14:58:59 ON 21 NOV 2006
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FILE COVERS 1907 - 21 Nov 2006 VOL 145 ISS 22
FILE LAST UPDATED: 20 Nov 2006 (20061120/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE
L2 31 SEA FILE=REGISTRY ABB=ON (24937-78-8/BI OR 25038-59-9/BI OR 25067-34-9/BI OR 7429-90-5/BI OR 7439-89-6/BI OR 7439-92-1/BI OR 7439-93-2/BI OR 7439-95-4/BI OR 7439-98-7/BI OR 7440-02-0/BI OR 7440-06-4/BI OR 7440-09-7/BI OR 7440-21-3/BI OR 7440-22-4/BI OR 7440-23-5/BI OR 7440-24-6/BI OR 7440-32-6/BI OR 7440-33-7/BI OR 7440-36-0/BI OR 7440-39-3/BI OR 7440-47-3/BI OR 7440-48-4/BI OR 7440-50-8/BI OR 7440-56-4/BI OR 7440-57-5/BI OR 7440-66-6/BI OR 7440-70-2/BI OR 7440-74-6/BI OR 9002-86-2/BI

```
                OR 9002-88-4/BI OR 9003-07-0/BI)
L3            6 SEA FILE=REGISTRY ABB=ON  L2 AND PMS/CI
L4       681958 SEA FILE=REGISTRY ABB=ON  (SI(L)O(L)C(L)H)/ELS
L5        73098 SEA FILE=REGISTRY ABB=ON  L4 AND PMS/CI
L6        86031 SEA FILE=REGISTRY ABB=ON  PA/PCT
L7        56322 SEA FILE=REGISTRY ABB=ON  PI/PCT
L8       197384 SEA FILE=REGISTRY ABB=ON  PES/PCT
L9        35169 SEA FILE=REGISTRY ABB=ON  POLF/PCT
L10       19127 SEA FILE=REGISTRY ABB=ON  PC/PCT
L11       17040 SEA FILE=REGISTRY ABB=ON  PSU/PCT
L12          24 SEA FILE=REGISTRY ABB=ON  L2 AND M/ELS
L13          23 SEA FILE=REGISTRY ABB=ON  L12 NOT 1/LI
L14       69470 SEA FILE=HCAPLUS ABB=ON  L5
L15      126556 SEA FILE=HCAPLUS ABB=ON  L14 OR (SILICON OR SI)(3A)POLYMER? OR
                POLYSILYL? OR POLYSILOX?
L16      356793 SEA FILE=HCAPLUS ABB=ON  (L13 OR NI OR TI OR CU OR AG OR AU OR
                PT OR FE OR CO OR CR OR W OR MO OR AL OR MG OR O K OR NA OR CA
                OR SR OR BA OR SI OR GE OR SB OR PB OR IN OR ZN)(4A)METAL?
L17        2013 SEA FILE=HCAPLUS ABB=ON  L15 AND L16
L18         448 SEA FILE=HCAPLUS ABB=ON  L17 AND (L6 OR L7 OR L8 OR L9 OR L10
                OR L3 OR L11)
L19         623 SEA FILE=HCAPLUS ABB=ON  L17 AND (POLYPROPYLENE? OR POLYETHYLEN
                E? OR PE OR PP OR POLYAMIDE? OR POLYIMIDE? OR POLYOLEFIN? OR
                POLYESTER? OR POLYACETAL? OR POLYCARBONATE? OR POLYSULFONE? OR
                PVC OR POLYVINYL? OR ETHYLENE(W)VINYL?)
L20         708 SEA FILE=HCAPLUS ABB=ON  L18 OR L19
L23      422068 SEA FILE=HCAPLUS ABB=ON  (L13 OR NI OR TI OR CU OR AG OR AU OR
                PT OR FE OR CO OR CR OR W OR MO OR AL OR MG OR O K OR NA OR CA
                OR SR OR BA OR SI OR GE OR SB OR PB OR IN OR ZN)(4A)(METAL? OR
                ANOD?)
L24        2197 SEA FILE=HCAPLUS ABB=ON  L23 AND L15
L26         480 SEA FILE=HCAPLUS ABB=ON  L24 AND (L6 OR L7 OR L8 OR L9 OR L10
                OR L3 OR L11)
L27         658 SEA FILE=HCAPLUS ABB=ON  L24 AND (POLYPROPYLENE? OR POLYETHYLEN
                E? OR PE OR PP OR POLYAMIDE? OR POLYIMIDE? OR POLYOLEFIN? OR
                POLYESTER? OR POLYACETAL? OR POLYCARBONATE? OR POLYSULFONE? OR
                PVC OR POLYVINYL? OR ETHYLENE(W)VINYL?)
L28         756 SEA FILE=HCAPLUS ABB=ON  L26 OR L27
L30          60 SEA FILE=HCAPLUS ABB=ON  (L20 OR L28) AND (ANOD? OR NEG?(3A)ELE
                CTROD?)
L31          15 SEA FILE=HCAPLUS ABB=ON  L30 AND ELECTROCHEMICAL?/SC,SX
L33          15 SEA FILE=HCAPLUS ABB=ON  L31 OR L31
L34          48 SEA FILE=HCAPLUS ABB=ON  (FIRST OR SECOND OR 2ND OR 1ST)(3A)POL
                YMER?(3A)?LAYER? AND (ANOD? OR NEG?(3A)ELECTROD?)
L35           5 SEA FILE=HCAPLUS ABB=ON  L34 AND METAL?(3A)?LAYER?
L36          19 SEA FILE=HCAPLUS ABB=ON  L33 OR L35
```

=> D L36 BIB ABS IND HITSTR 1-19

L36 ANSWER 1 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2006:648604 HCAPLUS
DN 145:106845
TI Reactive metal hydrogel/inert polymer composite **anode** and primary metal-air battery
IN Ferrando, William A.
PA The United States of America as Represented by the Secretary of the Navy, USA
SO U.S., 16 pp.
CODEN: USXXAM

DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 7070882	B1	20060704	US 2002-298516	20021119
PRAI US 2002-298516		20021119		

AB The invention concerns an **anode** for use in a primary metal-air battery having an alkaline or neutral salt electrolyte, the **anode** comprising: a low mol. weight reactive metal substrate; a low mol. weight reactive metal powder; and at least a two-component electrolyte resistant polymer system; the first component is an ionic conductive linearized hydrogel, the second component is an inert structural polymer matrix, the reactive metal powder is dispersed and the first component is uniformly dispersed within the second component to form a material, and the reactive metal is selected from the group consisting of magnesium, aluminum, tin, mixts. of aluminum, tin and magnesium and alloys thereof.

INCL 429218100; 429245000; 429217000; 429206000; 427123000; 427058000; 427126100; 252182100; 264104000

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST battery **anode** reactive metal hydrogel inert polymer composite

IT Primary batteries
(mech. rechargeable; reactive metal hydrogel/inert polymer composite **anode** and primary metal-air battery)

IT Metallic fibers
RL: DEV (Device component use); USES (Uses)
(nickel; reactive metal hydrogel/inert polymer composite **anode** and primary metal-air battery)

IT Hydrogels
(polymeric; reactive metal hydrogel/inert polymer composite **anode** and primary metal-air battery)

IT Battery **anodes**
(reactive metal hydrogel/inert polymer composite **anode** and primary metal-air battery)

IT Metals, uses
RL: DEV (Device component use); USES (Uses)
(reactive metal hydrogel/inert polymer composite **anode** and primary metal-air battery)

IT **Polysiloxanes**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(reactive metal hydrogel/inert polymer composite **anode** and primary metal-air battery)

IT Plastics, uses
RL: DEV (Device component use); USES (Uses)
(thermoplastics; reactive metal hydrogel/inert polymer composite **anode** and primary metal-air battery)

IT Aluminum alloy, base
RL: DEV (Device component use); USES (Uses)
(reactive metal hydrogel/inert polymer composite **anode** and primary metal-air battery)

IT 1310-58-3, Potassium hydroxide, uses 1310-73-2, Sodium hydroxide, uses **7429-90-5**, Aluminum, uses **7439-95-4**, Magnesium, uses **7440-02-0**, Nickel, uses 7440-31-5, Tin, uses 7447-40-7, Potassium chloride, uses 7647-14-5, Sodium chloride, uses 9002-85-1, **Polyvinylidene** chloride **9002-88-4**, **Polyethylene** 9003-01-4, Polyacrylic acid **9003-07-0**, **Polypropylene** 9003-53-6, Polystyrene 9011-14-7, PMMA 191877-18-6, EB50V
RL: DEV (Device component use); USES (Uses)

(reactive **metal** hydrogel/inert polymer composite **anode** and primary metal-air battery)

IT **7429-90-5**, Aluminum, uses **7439-95-4**, Magnesium, uses **7440-02-0**, Nickel, uses **9002-88-4**, **Polyethylene** **9003-07-0**, **Polypropylene**
RL: DEV (Device component use); USES (Uses)
(reactive **metal** hydrogel/inert polymer composite **anode** and primary metal-air battery)

RN 7429-90-5 HCAPLUS
CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7440-02-0 HCAPLUS
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

$H_2C{=}CH_2$

RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

$H_3C{-}CH{=}CH_2$

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2006:144677 HCAPLUS
DN 144:195326
TI Outer case members for secondary batteries for prevention of internal

short circuits at wider temperature range
IN Yamamura, Akira
PA Nissan Motor Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2006049219	A2	20060216	JP 2004-231451	20040806
PRAI JP 2004-231451		20040806		

AB The members, for keeping and sealing power generation members, include **metal layers**, **first polymer** inner **layers** (e.g., polypropylene), and **second polymer** inner **layers** (e.g., polyethylene), satisfying T1p > T2p and T2g < T1g (T1p, T2p = m.p. of the **first** and **second polymer** inner **layers**, resp.; T1g, T2g = Tg of the **first** and **second polymer** inner **layers**, resp.). The secondary batteries show no p.d. between the **metal layers** and cathode and **anode** terminals after storage at low and high temps., and no self heat generation after overheating.
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST outer case battery prevention internal short circuit; metal polymer laminate outer case battery; polypropylene polyethylene aluminum alloy laminate battery case
IT Secondary batteries
(outer case members including **metal layers** and **first** and **second polymer** inner **layers** for secondary batteries)
IT Aluminum alloy, base
RL: DEV (Device component use); USES (Uses)
(**metal layer**; outer case members including **metal layers** and **first** and **second polymer** inner **layers** for secondary batteries)
IT 9003-07-0, Polypropylene
RL: DEV (Device component use); USES (Uses)
(first inner layer; outer case members including **metal layers** and **first** and **second polymer** inner **layers** for secondary batteries)
IT 9002-88-4, Polyethylene
RL: DEV (Device component use); USES (Uses)
(second inner layer; outer case members including **metal layers** and **first** and **second polymer** inner **layers** for secondary batteries)

L36 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:695959 HCAPLUS
DN 143:196824
TI Batteries with suppressed leakage and high discharge capacity
IN Ishii, Haruyoshi; Saruwatari, Hidesato; Hirai, Takahiro; Takami, Norio
PA Toshiba Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 22 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 2005209585 A2 20050804 JP 2004-17335 20040126
PRAI JP 2004-17335 20040126
AB The batteries, capable of discharging gases generated during discharge, have **anodes** containing **Al**- or **Mg**-containing **anode** active mass, water-containing solvent electrolyte solns., and water-repellent layers (e.g., PTFE) with water contact angle ≥80° at downstream parts of gas discharge passages on **anode** surfaces.
IC ICM H01M004-06
ICS H01M002-12; H01M004-46; H01M006-08
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST battery **anode** aluminum magnesium leakage prevention; PTFE water repellent battery primary
IT Battery **anodes**
Battery electrolytes
Primary batteries
(batteries with suppressed leakage and high discharge capacity)
IT Hydrocarbons, uses
RL: DEV (Device component use); USES (Uses)
(resins, paraffin, water-repellent layer; batteries with suppressed leakage and high discharge capacity)
IT **Polymers**, uses
RL: DEV (Device component use); USES (Uses)
(**silicon**-containing, water-repellent layer; batteries with suppressed leakage and high discharge capacity)
IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(water-repellent layer; batteries with suppressed leakage and high discharge capacity)
IT 7429-90-5, Aluminum, uses 7439-95-4, Magnesium, uses 11109-06-1 52976-41-7 57622-21-6 94197-65-6 623166-92-7
RL: DEV (Device component use); USES (Uses)
(batteries with suppressed leakage and high discharge capacity)
IT 96-48-0, γ-Butyrolactone 7732-18-5, Water, uses
RL: DEV (Device component use); USES (Uses)
(electrolyte solvent; batteries with suppressed leakage and high discharge capacity)
IT 9002-84-0, PTFE 9002-85-1, Poly(vinylidene chloride) **9002-86-2**, **Polyvinyl** chloride 9003-53-6, Polystyrene 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 24980-67-4, Poly(ethylene trifluoride) 24981-14-4, **Polyvinyl** fluoride 25067-59-8, **Polyvinylcarbazole**
RL: DEV (Device component use); USES (Uses)
(water-repellent layer; batteries with suppressed leakage and high discharge capacity)
IT **9002-86-2**, **Polyvinyl** chloride
RL: DEV (Device component use); USES (Uses)
(water-repellent layer; batteries with suppressed leakage and high discharge capacity)
RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4
CMF C2 H3 Cl

$H_2C{=}CH{-}Cl$

L36 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:526310 HCAPLUS
DN 144:153287
TI Enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as an electron mediator
AU Sato, Fuyuki; Togo, Makoto; Islam, Mohammed Kamrul; Matsue, Tomokazu; Kosuge, Junichi; Fukasaku, Noboru; Kurosawa, Satoshi; Nishizawa, Matsuhiko
CS Department of Bioengineering and Robotics, Graduate School of Engineering, Tohoku University, Sendai, Aramaki, Miyagi, Aoba-ku, 980-8579, Japan
SO Electrochemistry Communications (2005), 7(7), 643-647
CODEN: ECCMF9; ISSN: 1388-2481
PB Elsevier B.V.
DT Journal
LA English
AB To create an enzyme-based biol. fuel cell generating electricity from glucose and O2, the authors modified a glassy carbon electrode with a bi-layer polymer membrane, the inner layer containing diaphorase (Dp) and the outer, glucose dehydrogenase (GDH, an NAD+-dependent enzyme). The Dp membrane was formed from a newly synthesized 2-methyl-1,4-naphthoquinone (Vitamin K3; VK3)-based polymer. This polymer showed reversible redox activity at a potential close to that of free VK3 (-0.25 V vs. Ag/AgCl saturate KCl), and served as an electron mediator of Dp for the electrocatalytic oxidation of NADH to NAD+. The addition of Ketjenblack into the Dp/VK3 film enhanced the generation of NAD+. The outer GDH membrane oxidized glucose continuously using NAD+ generated at the inner Dp film. To construct the glucose/O2 biol. fuel cell, the authors coupled the enzyme-modified **anode** with a polydimethylsiloxane-coated **Pt** cathode. The cell's open circuit voltage was 0.62 V and its maximum power d. was 14.5 μW/cm2 at 0.36 V in an air-saturated phosphate buffered saline solution (pH 7.0) at 37 °C containing 0.5 mM NADH and 10 mM glucose. Although its performance deteriorated to .apprx.4 μW/cm2 over 4 days, the cell subsequently maintained this power d. for >2 wks.
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 7, 35, 76
ST enzyme glucose fuel cell Vitamin K3 polyallylamine immobilized mediator
IT Geobacillus stearothermophilus
(EC 1.6.99, diaphorase from; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
IT Fuel cells
(biochem. fuel cells; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
IT Phosphates, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(buffers; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
IT Electric current-potential relationship
(cyclic voltammograms for assembled electrodes and fuel cells; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
IT Open circuit potential
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)
IT Enzymes, uses
RL: DEV (Device component use); USES (Uses)

(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT Graphitized carbon black
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT Electrodes
(glassy carbon; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT Electric energy
(power d. of assembled fuel cell; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 874161-36-1
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(PAA-VK3 polymer membrane, electron mediator for diaphorase; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT **28826-16-6**, Poly(L-lysine hydrochloride)
RL: DEV (Device component use); USES (Uses)
(d.p. 1109; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 30551-89-4, Polyallylamine
RL: RCT (Reactant); RACT (Reactant or reagent)
(d.p. 1226; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 26403-72-5, Poly(ethylene glycol) diglycidyl ether
RL: DEV (Device component use); USES (Uses)
(d.p. 9.3, PEGDGE; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 53-84-9, NAD+ 58-68-4, NADH **9016-00-6**, Polydimethylsiloxane
RL: DEV (Device component use); USES (Uses)
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 6066-82-6DP, N-Hydroxysuccinimide, reaction products with 2-(3-carboxypropyl)-3-methyl-1,4-naphthoquinone, then with polyallylamine and **polyethylene** glycol diglycidyl ether 26403-72-5DP, Poly(ethylene glycol) diglycidyl ether, reaction products with the reaction product of 2-(3-carboxypropyl)-3-methyl-1,4-naphthoquinone with N-hydroxysuccinimide, then polyallylamine 30551-89-4DP, Polyallylamine, reaction products with the reaction product of 2-(3-carboxypropyl)-3-methyl-1,4-naphthoquinone with N-hydroxysuccinimide, then with **polyethylene** glycol diglycidyl ether 82376-80-5DP, reaction products with N-hydroxysuccinimide, followed by polyallylamine and **polyethylene** glycol diglycidyl ether
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 50-99-7, D-Glucose, uses 7440-06-4, Platinum, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 6066-82-6, N-Hydroxysuccinimide
RL: RCT (Reactant); RACT (Reactant or reagent)
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 82376-80-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 9028-53-9, Glucose dehydrogenase
RL: DEV (Device component use); USES (Uses)
(from BAcillus sp.; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT 37340-89-9, Diaphorase
RL: DEV (Device component use); USES (Uses)
(from Bacillus stearothermophilus; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

IT **28826-16-6**, Poly(L-lysine hydrochloride)
RL: DEV (Device component use); USES (Uses)
(d.p. 1109; enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

RN 28826-16-6 HCAPLUS
CN L-Lysine, homopolymer, hydrochloride (9CI) (CA INDEX NAME)

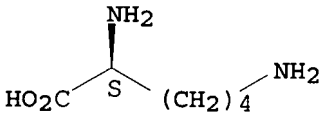
CM 1

CRN 25104-18-1
CMF (C6 H14 N2 O2)x
CCI PMS

CM 2

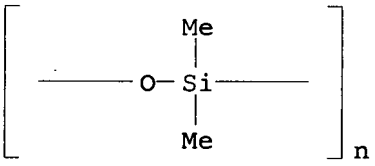
CRN 56-87-1
CMF C6 H14 N2 O2

Absolute stereochemistry.



IT **9016-00-6**, Polydimethylsiloxane
RL: DEV (Device component use); USES (Uses)
(enzyme-based glucose fuel cell using Vitamin K3-immobilized polymer as electron mediator)

RN 9016-00-6 HCAPLUS
CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:1118892 HCAPLUS
DN 142:59744

TI **Anode** composition for lithium battery
IN Choi, Young-Min; Kim, Kyung-Ho; Paik, Un-Gyu
PA Samsung SDI Co., Ltd., S. Korea
SO Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1489673	A1	20041222	EP 2004-253675	20040618
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
	KR 2004110665	A	20041231	KR 2003-40085	20030620
	JP 2005011808	A2	20050113	JP 2004-173057	20040610
	CN 1574425	A	20050202	CN 2004-10055037	20040618
	US 2004258991	A1	20041223	US 2004-870993	20040621
PRAI	KR 2003-40085	A	20030620		

AB Provided are an **anode** composition for a lithium battery, and an **anode** and a lithium battery using the same. The **anode** composition can improve **anode** and battery characteristics while using water as a solvent. The **anode** composition includes an **anode** active material, a synthetic rubber binder, a cellulose-based dispersing agent, and a water-soluble anionic polyelectrolyte.

IC ICM H01M004-62
ICS H01M004-58
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST lithium battery **anode** compn
IT Butadiene rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(Me-methacrylate-grafted; **anode** composition for lithium battery)
IT Polyelectrolytes
(anionic; **anode** composition for lithium battery)
IT Battery **anodes**
(**anode** composition for lithium battery)
IT Carbon fibers, uses
Carbonaceous materials (technological products)
RL: DEV (Device component use); USES (Uses)
(**anode** composition for lithium battery)
IT Neoprene rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**anode** composition for lithium battery)
IT **Polysiloxanes**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**anode** composition for lithium battery)
IT Styrene-butadiene rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**anode** composition for lithium battery)
IT Synthetic rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**anode** composition for lithium battery)
IT Styrene-butadiene rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(carboxy-modified; **anode** composition for lithium battery)
IT Secondary batteries
(lithium; **anode** composition for lithium battery)
IT Butadiene rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(nitrile group-containing; **anode** composition for lithium battery)

IT 77-92-9, Citric acid, uses 87-69-4, Tartaric acid, uses 110-15-6, Succinic acid, uses **7429-90-5D**, Aluminum, compound **7439-92-1D**, Lead, compound **7439-95-4D**, Magnesium, compound 7440-21-3D, Silicon, compound **7440-22-4D**, Silver, compound 7440-28-0D, Thallium, compound 7440-31-5D, Tin, compound **7440-56-4D**, Germanium, compound **7440-66-6D**, Zinc, compound 7440-69-9D, Bismuth, compound **7440-74-6D**, Indium, compound 7782-42-5, Graphite, uses 25087-26-7, Polymethacrylic acid
RL: DEV (Device component use); USES (Uses)
(**anode** composition for lithium battery)

IT 126-44-3, Citrate, uses 9000-11-7, Cmc 9003-01-4, Polyacrylic acid 9004-34-6, Cellulose, uses 9004-34-6D, Cellulose, oxyethyl derivative 9004-42-6, Carboxyethyl cellulose 9032-36-4, Aminoethyl cellulose
RL: MOA (Modifier or additive use); USES (Uses)
(**anode** composition for lithium battery)

IT **9003-17-2**
RL: MOA (Modifier or additive use); USES (Uses)
(butadiene rubber, Me-methacrylate-grafted; **anode** composition for lithium battery)

IT **9003-17-2D**, nitrile group-containing
RL: MOA (Modifier or additive use); USES (Uses)
(butadiene rubber; **anode** composition for lithium battery)

IT 9010-98-4
RL: MOA (Modifier or additive use); USES (Uses)
(neoprene rubber; **anode** composition for lithium battery)

IT **9003-55-8**
RL: MOA (Modifier or additive use); USES (Uses)
(styrene-butadiene rubber; **anode** composition for lithium battery)

IT **7429-90-5D**, Aluminum, compound **7439-92-1D**, Lead, compound **7439-95-4D**, Magnesium, compound **7440-22-4D**, Silver, compound **7440-56-4D**, Germanium, compound **7440-66-6D**, Zinc, compound **7440-74-6D**, Indium, compound
RL: DEV (Device component use); USES (Uses)
(**anode** composition for lithium battery)

RN 7429-90-5 HCAPLUS
CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7439-92-1 HCAPLUS
CN Lead (8CI, 9CI) (CA INDEX NAME)

Pb

RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7440-22-4 HCAPLUS
CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

RN 7440-56-4 HCAPLUS
CN Germanium (7CI, 8CI, 9CI) (CA INDEX NAME)

Ge

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 7440-74-6 HCAPLUS
CN Indium (8CI, 9CI) (CA INDEX NAME)

In

IT **9003-17-2**
RL: MOA (Modifier or additive use); USES (Uses)
(butadiene rubber, Me-methacrylate-grafted; **anode** composition for lithium battery)
RN 9003-17-2 HCAPLUS
CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0
CMF C4 H6

$H_2C{=}CH{-}CH{=}CH_2$

IT **9003-17-2D**, nitrile group-containing
RL: MOA (Modifier or additive use); USES (Uses)
(butadiene rubber; **anode** composition for lithium battery)
RN 9003-17-2 HCAPLUS
CN 1,3-Butadiene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0
CMF C4 H6

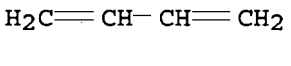
$H_2C{=}CH{-}CH{=}CH_2$

IT **9003-55-8**
RL: MOA (Modifier or additive use); USES (Uses)
(styrene-butadiene rubber; **anode** composition for lithium battery)
RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

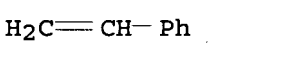
CM 1

CRN 106-99-0
CMF C4 H6



CM 2

CRN 100-42-5
CMF C8 H8



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:1036523 HCAPLUS
DN 142:9264
TI **Anode** for rechargeable lithium battery
IN Cho, Chung-Kun; Hwang, Duck-Chul; Hwang, Seung-Sik; Lee, Sang-Mock
PA Samsung SDI Co., Ltd., S. Korea
SO U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004241549	A1	20041202	US 2004-776229	20040212
	KR 2004102436	A	20041208	KR 2003-33819	20030527
	JP 2004356082	A2	20041216	JP 2003-359504	20031020
	CN 1574424	A	20050202	CN 2004-10047713	20040305
PRAI	KR 2003-33819	A	20030527		

AB The **anode** comprises a **first polymer layer**, a **second polymer layer** on the **first polymer layer**, a **metal layer** on the **second polymer layer** and an **anode** active material **layer** on the **metal layer.**
IC ICM H01M002-16
ICS H01M004-66; H01M004-40
INCL 429246000; 429245000; 429231950
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 49
ST secondary lithium battery **anode**
IT Battery **anodes**
Laminated materials
(**anodes** for secondary lithium batteries)
IT Fluoropolymers, uses
Polyamides, uses

Polycarbonates, uses
Polyesters, uses
Polyimides, uses
Polyolefins
Polyoxyalkylenes, uses
Polyoxymethylenes, uses
Polysulfones, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(**anodes** for secondary lithium batteries)

IT **Polysiloxanes**, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(aralkyl, halo; **anodes** for secondary lithium batteries)

IT Coating process
(gap, knife, slot-die; **anodes** for secondary lithium batteries)

IT Secondary batteries
(lithium; **anodes** for secondary lithium batteries)

IT Alkadienes
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(polymers; **anodes** for secondary lithium batteries)

IT Coating process
(roller; **anodes** for secondary lithium batteries)

IT Coating process
(spray; **anodes** for secondary lithium batteries)

IT **7429-90-5**, Aluminum, uses **7439-89-6**, Iron, uses **7439-92-1**, Lead, uses 7439-93-2, Lithium, uses **7439-95-4**, Magnesium, uses **7439-98-7**, Molybdenum, uses **7440-02-0**, Nickel, uses **7440-06-4**, Platinum, uses **7440-09-7**, Potassium, uses 7440-21-3, Silicon, uses **7440-22-4**, Silver, uses **7440-23-5**, Sodium, uses **7440-24-6**, Strontium, uses **7440-32-6**, Titanium, uses **7440-33-7**, Tungsten, uses **7440-36-0**, Antimony, uses **7440-39-3**, Barium, uses **7440-47-3**, Chromium, uses **7440-48-4**, Cobalt, uses **7440-50-8**, Copper, uses **7440-56-4**, Germanium, uses **7440-57-5**, Gold, uses **7440-66-6**, Zinc, uses **7440-70-2**, Calcium, uses **7440-74-6**, Indium, uses **9002-86-2**, **PVC** **9002-88-4**, **Polyethylene** **9003-07-0**, **Polypropylene** **24937-78-8**, **Ethylene vinyl** acetate copolymer **25038-59-9**, uses **25067-34-9**, **Ethylene vinyl** alcohol copolymer
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(**anodes** for secondary lithium batteries)

IT **7429-90-5**, Aluminum, uses **7439-89-6**, Iron, uses **7439-92-1**, Lead, uses **7439-95-4**, Magnesium, uses **7439-98-7**, Molybdenum, uses **7440-02-0**, Nickel, uses **7440-06-4**, Platinum, uses **7440-09-7**, Potassium, uses **7440-22-4**, Silver, uses **7440-23-5**, Sodium, uses **7440-24-6**, Strontium, uses **7440-32-6**, Titanium, uses **7440-33-7**, Tungsten, uses **7440-36-0**, Antimony, uses **7440-39-3**, Barium, uses **7440-47-3**, Chromium, uses **7440-48-4**, Cobalt, uses **7440-50-8**, Copper, uses **7440-56-4**, Germanium, uses **7440-57-5**, Gold, uses **7440-66-6**, Zinc, uses **7440-70-2**, Calcium, uses **7440-74-6**, Indium, uses **9002-86-2**, **PVC** **9002-88-4**, **Polyethylene** **9003-07-0**,

Polypropylene 24937-78-8, Ethylene vinyl acetate copolymer **25038-59-9**, uses
25067-34-9, Ethylene vinyl alcohol copolymer
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(**anodes** for secondary lithium batteries)

RN 7429-90-5 HCAPLUS
CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7439-89-6 HCAPLUS
CN Iron (7CI, 8CI, 9CI) (CA INDEX NAME)

Fe

RN 7439-92-1 HCAPLUS
CN Lead (8CI, 9CI) (CA INDEX NAME)

Pb

RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7439-98-7 HCAPLUS
CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

Mo

RN 7440-02-0 HCAPLUS
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

RN 7440-06-4 HCAPLUS
CN Platinum (8CI, 9CI) (CA INDEX NAME)

Pt

RN 7440-09-7 HCAPLUS
CN Potassium (8CI, 9CI) (CA INDEX NAME)

K

RN 7440-22-4 HCAPLUS
CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

RN 7440-23-5 HCAPLUS
CN Sodium (8CI, 9CI) (CA INDEX NAME)

Na

RN 7440-24-6 HCAPLUS
CN Strontium (8CI, 9CI) (CA INDEX NAME)

Sr

RN 7440-32-6 HCAPLUS
CN Titanium (8CI, 9CI) (CA INDEX NAME)

Ti

RN 7440-33-7 HCAPLUS
CN Tungsten (8CI, 9CI) (CA INDEX NAME)

W

RN 7440-36-0 HCAPLUS
CN Antimony (8CI, 9CI) (CA INDEX NAME)

Sb

RN 7440-39-3 HCAPLUS
CN Barium (8CI, 9CI) (CA INDEX NAME)

Ba

RN 7440-47-3 HCAPLUS
CN Chromium (8CI, 9CI) (CA INDEX NAME)

Cr

RN 7440-48-4 HCAPLUS
CN Cobalt (8CI, 9CI) (CA INDEX NAME)

Co

RN 7440-50-8 HCAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7440-56-4 HCAPLUS
CN Germanium (7CI, 8CI, 9CI) (CA INDEX NAME)

Ge

RN 7440-57-5 HCAPLUS
CN Gold (8CI, 9CI) (CA INDEX NAME)

Au

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 7440-70-2 HCAPLUS
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

RN 7440-74-6 HCAPLUS
CN Indium (8CI, 9CI) (CA INDEX NAME)

In

RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4
CMF C2 H3 Cl

$H_2C{=}CH{-}Cl$

RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

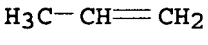
CM 1

CRN 74-85-1
CMF C2 H4

RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

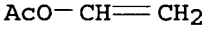
CRN 115-07-1
CMF C3 H6



RN 24937-78-8 HCAPLUS
CN Acetic acid ethenyl ester, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

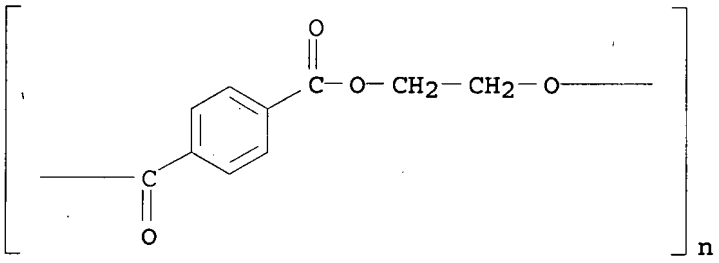
CRN 108-05-4
CMF C4 H6 O2



CM 2

CRN 74-85-1
CMF C2 H4

RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 25067-34-9 HCAPLUS
CN Ethenol, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5
CMF C2 H4 O

$H_2C{=}CH{-}OH$

CM 2

CRN 74-85-1
CMF C2 H4

$H_2C{=}CH_2$

L36 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:842778 HCAPLUS
DN 141:352694
TI Metal air battery
IN Bando, Naomi; Iwahisa, Masahiro
PA Toshiba Battery Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004288572	A2	20041014	JP 2003-82127	20030325
PRAI	JP 2003-82127		20030325		

AB The title battery uses a laminated sheet to make the outer container and is characterized by having low cost and high capacity. The battery comprises a cathode, an **anode**, and a separator sandwiched by the electrodes. The laminated sheet is made using composite synthetic resin. The laminated sheet on the **anode** side has at least one layer containing ≥1 air holes, at least one layer made of hydrophobic membrane (fluoride resin), and a layer made of O selectively permeable material.
IC ICM H01M012-06
CC 52-1 (**Electrochemical**, Radiational, and Thermal Energy

Technology)
Section cross-reference(s): 76
ST metal air battery laminated sheet composite synthetic resin
IT Plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(composite; metal air battery having low cost and high capacity)
IT Resins
RL: TEM (Technical or engineered material use); USES (Uses)
(fluoride; metal air battery having low cost and high capacity)
IT Fluoropolymers, uses
Polyamides, uses
Polysiloxanes, uses
RL: DEV (Device component use); USES (Uses)
(metal air battery having low cost and high capacity)
IT Primary batteries
(metal air; metal air battery having low cost and high capacity)
IT **7429-90-5**, Aluminum, uses 9002-84-0, Polytetrafluoroethylene
9003-07-0, **Polypropylene**
RL: DEV (Device component use); USES (Uses)
(**metal** air battery having low cost and high capacity)
IT **7429-90-5**, Aluminum, uses **9003-07-0**,
Polypropylene
RL: DEV (Device component use); USES (Uses)
(**metal** air battery having low cost and high capacity)
RN 7429-90-5 HCAPLUS
CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

$H_3C-CH=CH_2$

L36 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:471092 HCAPLUS
DN 139:29482
TI Solid electrolytic capacitors and manufacture of capacitors thereof
IN Inoue, Kazufumi; Kikuchi, Masayuki; Yamamoto, Satoru; Oshima, Masashi
PA Japan Carlit Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003173933	A2	20030620	JP 2001-374061	20011207
PRAI JP 2001-374061		20011207		

AB The title manufacturing of high-withstand voltage capacitors involves process

sequence (A) or (B), wherein (A) involves (1) forming a conductive polymer layer over a dielec. film on a valve **metal layer** and (2) controlling the conductivity in the conductive polymer to 10-2.apprx.10-10 S/cm by oxidation, reduction, heat-treatment, or cathode-polarization in an electrolyte solution or (B) involves (1) forming an undoped conductive **polymer layer** as a **1st** solid electrolyte **layer** having its conductivity 10-2.apprx.10-10 S/cm and forming a prior-art conductive **polymer** film as a **2nd** solid electrolyte **layer.** The manufacturing process provides the capacitors with improved withstand voltage without increase of equivalent-series resistance (ESR).

IC ICM H01G009-032
ICS H01G009-00

CC 76-10 (Electric Phenomena)
Section cross-reference(s): 38

ST polymer conductor solid electrolyte capacitor withstand voltage ESR

IT Dielectric polarization
(cathode; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)

IT Conducting polymers
(electrolyte layer; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)

IT Electric resistance
(equivalent-series; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)

IT Heat treatment
Oxidation
Reduction
(for conductivity controlling of polymer conductor; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)

IT Solid electrolytes
(polymer; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)

IT Electrolytic capacitors
(solid; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)

IT Breakdown voltage
(withstand; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)

IT 30604-81-0, Polypyrrole
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(conductive polymer film; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)

IT 7429-90-5, Aluminum, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(etched film, **anode**; solid electrolytic capacitors and manufacture of capacitors with conductivity-controlled polymer layers)

L36 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:17751 HCAPLUS
DN 138:42089
TI Packaging methods and fabrication techniques for making electrochemical cells and multicell batteries
IN Klein, Martin G.; Ralston, Paula; Plivelich, Robert
PA Electro Energy, Inc., USA
SO U.S., 20 pp.
CODEN: USXXAM

DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6503658	B1	20030107	US 2001-902871	20010711
	US 2003013015	A1	20030116		
	CA 2453558	AA	20030123	CA 2002-2453558	20020628
	WO 2003007415	A1	20030123	WO 2002-US20368	20020628
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1419549	A1	20040519	EP 2002-756320	20020628
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2004523091	T2	20040729	JP 2003-513073	20020628
	CN 1620735	A	20050525	CN 2002-817670	20020628
	TW 571457	B	20040111	TW 2002-91115341	20020710
	US 2003138691	A1	20030724	US 2003-337816	20030106
	US 6887620	B2	20050503		
PRAI	US 2001-902871	A	20010711		
	WO 2002-US20368	W	20020628		

AB The bipolar electrochem. battery of the invention comprises: a stack of at least two electrochem. cells elec. arranged in series with the pos. face of each cell contacting the neg. face of an adjacent cell, wherein each of the cells comprises (a) a **neg. electrode**; (b) a pos. electrode; (c) a separator between the electrodes, wherein the separator includes an electrolyte; (d) a first elec. conductive lamination comprising a first inner **metal layer** and a **first polymeric** outer **layer**, the **first polymeric** outer **layer** having at least one perforation therein to expose the first inner **metal layer**, the first elec. conductive lamination being in elec. contact with the outer face of the **neg. electrode**; and (e) a second elec. conductive lamination comprising a second inner **metal layer** and a **second polymeric** outer **layer**, the **second polymeric** outer **layer** having at least one perforation therein to expose the second inner **metal layer**, the second elec. conductive lamination being in elec. contact with the outer face of the pos. electrode; wherein the first and second laminations are sealed peripherally to each other to form an enclosure including the electrodes, the separator and the electrolyte.

IC ICM H01M010-18
ICS H01M006-48; H01M006-00
INCL 429210000; 429157000; 429162000; 429124000; 429127000; 429082000; 029623100; 029623300
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72
ST battery bipolar fabrication packaging method; electrochem cell fabrication packaging method
IT Epoxy resins, uses
Tar
RL: TEM (Technical or engineered material use); USES (Uses)

(binder; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT Rubber, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(cement, binder; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT Electric apparatus
(electrochem.; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT Polysulfones, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(layer; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT Battery **anodes**
Battery cathodes
Compression
Packaging process
Primary batteries
Secondary batteries
(packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT Hydrides
Rare earth alloys
RL: DEV (Device component use); USES (Uses)
(packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT Cement
(rubber, binder; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT 1309-42-8, Magnesium hydroxide 1309-48-4, Magnesium oxide, uses 1310-65-2, Lithium hydroxide 1313-99-1, Nickel oxide nio, uses 1344-69-0, Copper hydroxide 1344-70-3, Copper oxide 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7440-48-4, Cobalt, uses 7782-44-7, Oxygen, uses 11104-61-3, Cobalt oxide 11113-74-9, Nickel hydroxide 11129-60-5, Manganese oxide 12057-24-8, Lithium oxide, uses 12626-88-9, Manganese hydroxide 12653-71-3, Mercury oxide 12672-51-4, Cobalt hydroxide 12673-77-7, Silver hydroxide 20667-12-3, Silver oxide 39321-13-6, Mercury hydroxide
RL: DEV (Device component use); USES (Uses)
(cathodes; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7440-02-0, Nickel, uses 7440-22-4, Silver, uses 7440-50-8, Copper, uses 9002-86-2, Polyvinyl chloride 9002-88-4, Polyethylene 9003-07-0, Polypropylene 12597-69-2, Steel, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(layer; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT 1333-74-0, Hydrogen, uses 7439-89-6, Iron, uses 7440-43-9, Cadmium, uses 7440-66-6, Zinc, uses 7580-67-8, Lithium hydride 37187-84-1, Nickel hydride 37251-25-5, Copper hydride 64296-66-8, Iron hydride
RL: DEV (Device component use); USES (Uses)
(packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

IT 7440-44-0, Carbon, uses
RL: MOA (Modifier or additive use); USES (Uses)
(polyvinyl chloride filled with; packaging methods and fabrication techniques for making electrochem. cells and multicell batteries)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:928094 HCAPLUS
DN 137:387171
TI Methods related to fuel cell electrode pair and stack assemblies
IN Mallari, Jonathan C.; Snyder, Suzanne M.; Chung, Vinh; Petrovic, Slobodan
PA Neah Power Systems, Inc., USA
SO U.S. Pat. Appl. Publ., 16 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002182479	A1	20021205	US 2002-147135	20020515
	US 6811916	B2	20041102		
	US 2005003263	A1	20050106	US 2004-893424	20040716
	US 7118822	B2	20061010		
PRAI	US 2001-291202P	P	20010515		
	US 2002-147135	A1	20020515		

AB Disclosed herein are fuel cell systems and, more specifically, fuel cell electrode pair and stack assemblies and various methods relating thereto. In one embodiment, the present invention is directed to a fuel cell electrode pair assembly adapted for use with a fuel cell system, wherein the electrode pair assembly comprises an **anode** structure derived from a first silicon substrate and an opposing cathode structure derived from a second silicon substrate, wherein at least (i) the **anode** structure comprises one or more discrete **anodic** porous active regions disposed across a top surface, or (ii) the cathode structure comprises one or more discrete cathodic porous active regions disposed across a top surface, and wherein the **anode** structure and the cathode structure each have at least one adjoining support member made of silicon, one or more plastics, or one or more glasses, and wherein the at least one adjoining support member of the **anode** structure and the at least one adjoining support member of the cathode structure have interfacing surfaces that are bonded together with an optional interposing binding material and with at least one selectively positioned bond to thereby form a hermetic seal, wherein the at least one selectively positioned bond is selected from the group consisting of a silicon-metal eutectic-silicon bond, a silicon-frit-silicon bond, a silicon-metal-silicon microwave bond, a **silicon-polymer** adhesive-**silicon** bond, a **silicon-polymer** adhesive-plastic bond, a **silicon-polymer** adhesive-glass bond, or a silicon-glass **anodic** bond.

IC ICM H01M004-86
INCL 429044000; 429042000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST fuel cell electrode pair stack assembly
IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(adhesive; methods related to fuel cell electrode pair and stack assemblies)
IT Metals, uses
RL: MOA (Modifier or additive use); USES (Uses)
(binders; methods related to fuel cell electrode pair and stack assemblies)
IT Polyoxyalkylenes, uses
RL: MOA (Modifier or additive use); USES (Uses)

(fluorine- and sulfo-containing, ionomers; methods related to fuel cell electrode pair and stack assemblies)
IT Adhesion, physical
(layer; methods related to fuel cell electrode pair and stack assemblies)
IT Binders
Dielectric films
Fuel cell **anodes**
Fuel cell cathodes
Fuel cells
Interface
Seals (parts)
(methods related to fuel cell electrode pair and stack assemblies)
IT Borosilicate glasses
Epoxy resins, uses
Polyimides, uses
Polysiloxanes, uses
Polysulfones, uses
Polythiophenylenes
RL: TEM (Technical or engineered material use); USES (Uses)
(methods related to fuel cell electrode pair and stack assemblies)
IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(polyoxyalkylene-, sulfo-containing, ionomers; methods related to fuel cell electrode pair and stack assemblies)
IT Ionomers
RL: MOA (Modifier or additive use); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-containing; methods related to fuel cell electrode pair and stack assemblies)
IT Frits
(silicate; methods related to fuel cell electrode pair and stack assemblies)
IT Bond
(silicon-frit-silicon; methods related to fuel cell electrode pair and stack assemblies)
IT Bond
(silicon-glass **anodic**; methods related to fuel cell electrode pair and stack assemblies)
IT Bond
(silicon-metal eutectic-silicon; methods related to fuel cell electrode pair and stack assemblies)
IT Bond
(silicon-metal-silicon microwave; methods related to fuel cell electrode pair and stack assemblies)
IT Bond
(**silicon-polymer** adhesive-glass; methods related to fuel cell electrode pair and stack assemblies)
IT Bond
(**silicon-polymer** adhesive-plastic; methods related to fuel cell electrode pair and stack assemblies)
IT Bond
(**silicon-polymer** adhesive-**silicon**; methods related to fuel cell electrode pair and stack assemblies)
IT Glass, uses
Plastics, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate; methods related to fuel cell electrode pair and stack assemblies)
IT 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-47-3, Chromium, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(adhesion layer; methods related to fuel cell electrode pair and stack assemblies)

IT 116-14-3, Tetrafluoroethylene, uses 694-87-1, Benzocyclobutane **31900-57-9**, Polydimethylsiloxane 37697-64-6, Perfluoro-2,2-dimethyl-1,3-dioxole
RL: MOA (Modifier or additive use); USES (Uses)
(adhesive; methods related to fuel cell electrode pair and stack assemblies)

IT 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses
RL: MOA (Modifier or additive use); USES (Uses)
(binders; methods related to fuel cell electrode pair and stack assemblies)

IT **7440-02-0**, Nickel, uses **7440-74-6**, Indium, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(bond **metal**; methods related to fuel cell electrode pair and stack assemblies)

IT 7631-86-9, Silica, uses 12033-89-5, Silicon nitride, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(dielec. layer; methods related to fuel cell electrode pair and stack assemblies)

IT 11109-42-5
RL: TEM (Technical or engineered material use); USES (Uses)
(eutectic; methods related to fuel cell electrode pair and stack assemblies)

IT 9041-80-9, Polyphenylene ether
RL: TEM (Technical or engineered material use); USES (Uses)
(methods related to fuel cell electrode pair and stack assemblies)

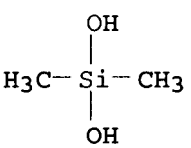
IT 7440-21-3, Silicon, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate; methods related to fuel cell electrode pair and stack assemblies)

IT **31900-57-9**, Polydimethylsiloxane
RL: MOA (Modifier or additive use); USES (Uses)
(adhesive; methods related to fuel cell electrode pair and stack assemblies)

RN 31900-57-9 HCAPLUS
CN Silanediol, dimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8
CMF C2 H8 O2 Si



IT **7440-02-0**, Nickel, uses **7440-74-6**, Indium, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(bond **metal**; methods related to fuel cell electrode pair and stack assemblies)

RN 7440-02-0 HCAPLUS
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

RN 7440-74-6 HCAPLUS
CN Indium (8CI, 9CI) (CA INDEX NAME)

In

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:833141 HCAPLUS
DN 137:327452
TI Zinc **anode** matrix for rechargeable alkaline battery
IN Cheiky, Michael; Hago, Wilson
PA Zinc Matrix Power, Inc., USA
SO PCT Int. Appl., 17 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002086992	A1	20021031	WO 2002-US12441	20020419
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2002177040	A1	20021128	US 2001-839668	20010419
	US 6582851	B2	20030624		
	GB 2388954	A1	20031126	GB 2003-16055	20020419
	GB 2388954	B2	20041013		
	EP 1380060	A1	20040114	EP 2002-723918	20020419
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	DE 10296642	T	20040422	DE 2002-10296642	20020419
	JP 2004527085	T2	20040902	JP 2002-584407	20020419
	DK 2003001441	A5	20031002	DK 2003-1441	20031002
PRAI	US 2001-839668	A	20010419		
	WO 2002-US12441	W	20020419		

AB An **anode** paste material is disclosed for use in zinc-based batteries that is designed to reduce zinc ion diffusion and resultant electrode shape change as well as zinc dendrite formation while optionally allowing for hydrogen permeability through the matrix comprising a regenerated cellulose film containing domains of hydrogen permeable polymer, particles of zinc and zinc oxide surrounded by hydrocarbon beads.
IC ICM H01M004-42
ICS H01M004-48
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST zinc **anode** matrix rechargeable alk battery
IT Secondary batteries
(**Ag-Zn**; zinc **anode** matrix for rechargeable alkaline battery)
IT Permeability
(H; zinc **anode** matrix for rechargeable alkaline battery)
IT Hydrocarbons, uses
RL: MOA (Modifier or additive use); USES (Uses)
(beads; zinc **anode** matrix for rechargeable alkaline battery)
IT Synthetic rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(hydrocarbon; zinc **anode** matrix for rechargeable alkaline battery)
IT Battery **anodes**
(zinc **anode** matrix for rechargeable alkaline battery)
IT **Polyolefins**
Polyoxyphenylenes
Polysiloxanes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(zinc **anode** matrix for rechargeable alkaline battery)
IT **9002-88-4**, **Polyethylene 9003-07-0**, **Polypropylene**
RL: MOA (Modifier or additive use); USES (Uses)
(beads; zinc **anode** matrix for rechargeable alkaline battery)
IT 1333-74-0, Hydrogen, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(permeability; zinc **anode** matrix for rechargeable alkaline battery)
IT 1310-58-3, Potassium hydroxide (K(OH)), uses 1314-13-2, Zinc oxide, uses **7440-22-4**, Silver, uses **7440-66-6**, Zinc, uses
RL: DEV (Device component use); USES (Uses)
(zinc **anode** matrix for rechargeable alkaline battery)
IT 9004-34-6, Cellulose, uses 9004-57-3, Ethyl cellulose 9016-80-2, Polymethylpentene
RL: MOA (Modifier or additive use); USES (Uses)
(zinc **anode** matrix for rechargeable alkaline battery)
IT **9002-88-4**, **Polyethylene 9003-07-0**, **Polypropylene**
RL: MOA (Modifier or additive use); USES (Uses)
(beads; zinc **anode** matrix for rechargeable alkaline battery)
RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

$H_2C{=}CH_2$

RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

$H_3C-CH=CH_2$

IT **7440-22-4**, Silver, uses **7440-66-6**, Zinc, uses
RL: DEV (Device component use); USES (Uses)
(zinc **anode** matrix for rechargeable alkaline battery)
RN 7440-22-4 HCAPLUS
CN Silver (8CI, 9CI) (CA INDEX NAME)

Ag

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:885609 HCAPLUS
DN 136:21971
TI Embossed current collector separator for an on-vehicle fuel cell for an automobile
IN Gao, Yunzhi; Kunimoto, Akira
PA K. K. Riken, Japan
SO Eur. Pat. Appl., 26 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1160900	A2	20011205	EP 2001-304644	20010525
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001338658	A2	20011207	JP 2000-157189	20000526
	JP 3404363	B2	20030506		
	JP 2001351643	A2	20011221	JP 2000-169559	20000606
	JP 3387046	B2	20030317		
	US 2002009630	A1	20020124	US 2001-865601	20010529
	US 6852438	B2	20050208		
PRAI	JP 2000-157189	A	20000526		
	JP 2000-169559	A	20000606		

AB A bipolar current collector separator for a fuel cell is composed of a metal plate having flow channels and contact faces that come into contact with electrodes or collectors, wherein a corrosion-resistant layer such as an **anodized** aluminum layer and a heat-resistant polymer layer is disposed on each of the flow channels.
IC ICM H01M008-02
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 56
ST fuel cell embossed current collector separator; automobile fuel cell

embossed current collector separator
IT Rayon, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(acrylic acid-grafted; embossed current collector separator for on-vehicle fuel cell for automobile)
IT Synthetic polymeric fibers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(acrylic acid-rayon, graft; embossed current collector separator for on-vehicle fuel cell for automobile)
IT **Polyamides**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(aromatic; embossed current collector separator for on-vehicle fuel cell for automobile)
IT Automobiles
Fuel cell electrodes
Fuel cell separators
Fuel cells
Porosity
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT Acrylic polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT **Polycarbonates**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT **Polyesters**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT **Polyimides**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT **Polysiloxanes**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT **Polysulfones**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT Polyurethanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT **Polyvinyl** butyrals
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)

IT Rayon, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT Vinal fibers
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(fluorine- and sulfo-containing, ionomers; embossed current collector separator for on-vehicle fuel cell for automobile)
IT **Polysulfones**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polyether-; embossed current collector separator for on-vehicle fuel cell for automobile)
IT Vinyl compounds, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polymers; embossed current collector separator for on-vehicle fuel cell for automobile)
IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(polyoxyalkylene-, sulfo-containing, ionomers; embossed current collector separator for on-vehicle fuel cell for automobile)
IT Ionomers
RL: DEV (Device component use); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-containing; embossed current collector separator for on-vehicle fuel cell for automobile)
IT Polyethers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**polysulfone**-; embossed current collector separator for on-vehicle fuel cell for automobile)
IT Viscose
(rayon; embossed current collector separator for on-vehicle fuel cell for automobile)
IT Aluminum alloy, base
RL: DEV (Device component use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT **7429-90-5D**, Aluminum, **anodized**
RL: TEM (Technical or engineered material use); USES (Uses)
(corrosion-resistant layer; embossed current collector separator for on-vehicle fuel cell for automobile)
IT 7429-90-5, Aluminum, uses 7440-32-6, Titanium, uses 11121-90-7, Carbon steel, uses
RL: DEV (Device component use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)
IT 409-21-2, Silicon carbide sic, uses 552-30-7, Trimellitic anhydride 7439-88-5, Iridium, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-22-4, Silver, uses 7440-44-0, Carbon, uses 7440-57-5, Gold, uses 9002-84-0, Ptfe **9002-86-2**, **Pvc 9002-88-4**, **Polyethylene 9003-07-0**, **Polypropylene** 9003-53-6, Polystyrene 9003-70-7D, Divinylbenzene-styrene copolymer, chlorinated 9011-06-7, Vinyl chloride-vinylidene chloride copolymer 11110-72-8 24937-79-9, **Polyvinylidene** fluoride **24968-12-5**, Polybutylene terephthalate **28630-21-9** 37258-17-6 37264-56-5 52831-04-6, Acrylic acid-α-methylstyrene-styrene copolymer 52974-15-9 53579-45-6 61345-12-8 62725-48-8,

Decanamide, homopolymer 63174-62-9 75022-54-7 95627-08-0
108265-62-9 377761-62-1
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)

IT **7429-90-5D**, Aluminum, **anodized**
RL: TEM (Technical or engineered material use); USES (Uses)
(corrosion-resistant layer; embossed current collector separator for on-vehicle fuel cell for automobile)

RN 7429-90-5 HCAPLUS
CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

IT **9002-86-2**, **Pvc 9002-88-4**, **Polyethylene**
9003-07-0, **Polypropylene 24968-12-5**,
Polybutylene terephthalate **28630-21-9**
RL: TEM (Technical or engineered material use); USES (Uses)
(embossed current collector separator for on-vehicle fuel cell for automobile)

RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4
CMF C2 H3 Cl

$H_2C{=}CH{-}Cl$

RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

$H_2C{=}CH_2$

RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

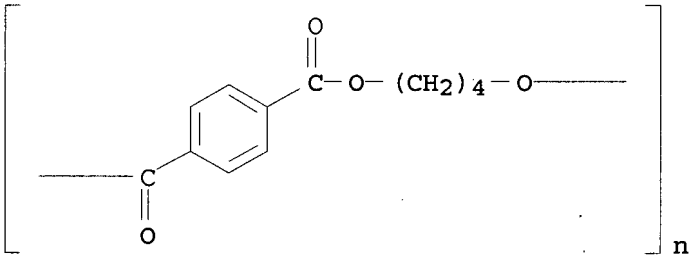
CM 1

CRN 115-07-1
CMF C3 H6

$H_3C{-}CH{=}CH_2$

RN 24968-12-5 HCAPLUS
CN Poly(oxy-1,4-butanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX

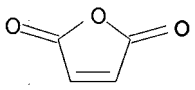
NAME)



RN 28630-21-9 HCAPLUS
CN 2,5-Furandione, polymer with 4,4'-methylenebis[benzenamine] (9CI) (CA INDEX NAME)

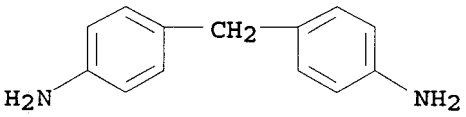
CM 1

CRN 108-31-6
CMF C4 H2 O3



CM 2

CRN 101-77-9
CMF C13 H14 N2



L36 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:101464 HCAPLUS
DN 134:150095
TI Magnesium-based primary and secondary batteries
IN Di Noto, Vito; Fauri, Maurizio
PA Universita' Degli Studi Di Padova, Italy
SO PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001009972	A1	20010208	WO 2000-EP7221	20000727

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,

LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

IT	1307220	B1	20011029	IT 1999-PD179	19990729
CA	2380509	AA	20010208	CA 2000-2380509	20000727
EP	1205003	A1	20020515	EP 2000-949410	20000727
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, IE, SI, LT, LV, FI, RO, MK, CY, AL				
JP	2003506832	T2	20030218	JP 2001-514499	20000727
RU	2269841	C2	20060210	RU 2002-102077	20000727
PRAI IT	1999-PD179	A	19990729		
WO	2000-EP7221	W	20000727		

AB The batteries disclosed herein are of the type comprising at least one **anode**, at least one cathode and at least one electrolyte, and current collectors, in which at least the **anode** is magnesium-based, and optionally also the cathode and the electrolyte contain magnesium. Assembly of the batteries involves the preparation of the individual components and the interposition of a thin layer of electrolyte between the magnesium-based **anode** and the cathode.

IC ICM H01M010-40
ICS H01M004-02

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST battery magnesium based

IT **Polysiloxanes**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(Me; magnesium-based primary and secondary batteries)

IT Silanes
RL: TEM (Technical or engineered material use); USES (Uses)
(alkoxy, **anode** stabilized with treatment with; magnesium-based primary and secondary batteries)

IT Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fluorinated; magnesium-based primary and secondary batteries)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(magnesium chloride salt P2O5-acidified; magnesium-based primary and secondary batteries)

IT Battery **anodes**
Battery cathodes
Battery electrolytes
Polymer electrolytes
Primary batteries
Secondary batteries
(magnesium-based primary and secondary batteries)

IT **Polycarbonates**, uses
Polyoxyalkylenes, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(magnesium-based primary and secondary batteries)

IT Polymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(magnesium-based primary and secondary batteries)

IT Polyphosphates
RL: RCT (Reactant); RACT (Reactant or reagent)

(magnesium-based primary and secondary batteries)
IT Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(magnesium-based primary and secondary batteries)
IT Polyphosphazenes
RL: TEM (Technical or engineered material use); USES (Uses)
(magnesium-based primary and secondary batteries)
IT Peroxides, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(organic, oxidizing agent; magnesium-based primary and secondary batteries)
IT Membranes, nonbiological
(organic; magnesium-based primary and secondary batteries)
IT Group VA element compounds
Transition metal pnictides
RL: TEM (Technical or engineered material use); USES (Uses)
(phosphides, substrate; magnesium-based primary and secondary batteries)
IT **Polysiloxanes**, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(polyalkyl; magnesium-based primary and secondary batteries)
IT Casting of metals
(solvent; magnesium-based primary and secondary batteries)
IT Alcohols, uses
Amides, uses
Amines, uses
Esters, uses
Ethers, uses
Thioethers
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(solvent; magnesium-based primary and secondary batteries)
IT Glass fiber fabrics
RL: TEM (Technical or engineered material use); USES (Uses)
(spacers; magnesium-based primary and secondary batteries)
IT Alkali metal oxides
Alkali metal sulfides
Alkaline earth oxides
Alloys, uses
Carbon fibers, uses
Metals, uses
Oxides (inorganic), uses
Phosphates, uses
Sulfides, uses
Transition metal oxides
Transition metal sulfides
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate; magnesium-based primary and secondary batteries)
IT Alkaline earth chalcogenides
RL: TEM (Technical or engineered material use); USES (Uses)
(sulfides, substrate; magnesium-based primary and secondary batteries)
IT Esters, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(thio, solvent; magnesium-based primary and secondary batteries)
IT **7429-90-5D**, Aluminum, trialkoxide, uses **7439-95-4D**, Magnesium, dialkoxide, uses **7440-32-6D**, Titanium, tetraalkoxide, uses 7440-67-7D, Zirconium, tetra-alkoxy, uses
RL: TEM (Technical or engineered material use); USES (Uses)

(**anode** stabilized with treatment with; magnesium-based primary and secondary batteries)
IT 7439-95-4, Magnesium, uses 7786-30-3, Magnesium chloride, uses
RL: DEV (Device component use); USES (Uses)
(magnesium-based primary and secondary batteries)
IT 25322-68-3DP, **Polyethylene** glycol, magnesium chloride salt P2O5-acidified **33679-22-0P** 120360-49-8P **155940-43-5P** **156048-32-7P**
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(magnesium-based primary and secondary batteries)
IT 204977-01-5, Edta homopolymer
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(magnesium-based primary and secondary batteries)
IT 546-93-0, Magnesium carbonate 1309-48-4, Magnesia, reactions 1314-56-3, Phosphorus pentoxide, reactions 7664-38-2, Phosphoric acid, reactions 7664-41-7, Ammonia, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(magnesium-based primary and secondary batteries)
IT 9002-81-7, Polymethylene oxide 9002-81-7D, Polymethylene oxide, fluorinated **9002-86-2**, **Polyvinyl** chloride **9002-88-4**, **Polyethylene** **9003-05-8**, POlyacrylamide 25014-41-9, Polyacrylonitrile 25322-68-3, **Polyethylene** oxide 25322-68-3D, **Polyethylene** oxide, fluorinated 25322-69-4, **Polypropylene** oxide 25322-69-4D, **Polypropylene** oxide, fluorinated
RL: TEM (Technical or engineered material use); USES (Uses)
(magnesium-based primary and secondary batteries)
IT 7722-84-1, Hydrogen peroxide, reactions 7782-44-7, Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidizing agent; magnesium-based primary and secondary batteries)
IT 68-12-2, Dmf, uses 71-43-2, Benzene, uses 108-88-3, Toluene, uses 109-99-9, Thf, uses 127-19-5, n,n-Dimethyl acetamide
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent; magnesium-based primary and secondary batteries)
IT 9004-34-6, Cellulose, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(spacers; magnesium-based primary and secondary batteries)
IT 7782-42-5, Graphite, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate; magnesium-based primary and secondary batteries)
IT **7429-90-5D**, Aluminum, trialkoxide, uses **7439-95-4D**, Magnesium, dialkoxide, uses **7440-32-6D**, Titanium, tetraalkoxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**anode** stabilized with treatment with; magnesium-based primary and secondary batteries)
RN 7429-90-5 HCAPLUS
CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7439-95-4 HCAPLUS
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

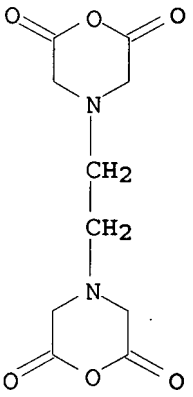
RN 7440-32-6 HCAPLUS
CN Titanium (8CI, 9CI) (CA INDEX NAME)

Ti

IT **33679-22-0P 155940-43-5P 156048-32-7P**
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(magnesium-based primary and secondary batteries)
RN 33679-22-0 HCAPLUS
CN 2,6-Morpholinedione, 4,4'-(1,2-ethanediyl)bis-, polymer with 1,2-ethanediol (9CI) (CA INDEX NAME)

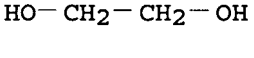
CM 1

CRN 23911-25-3
CMF C10 H12 N2 O6



CM 2

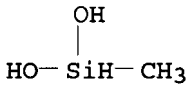
CRN 107-21-1
CMF C2 H6 O2



RN 155940-43-5 HCAPLUS
CN Silanediol, methyl-, polymer with oxirane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 43641-90-3
CMF C H6 O2 Si



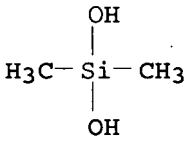
CM 2

CRN 75-21-8
CMF C2 H4 O

RN 156048-32-7 HCAPLUS
CN Silanediol, dimethyl-, polymer with oxirane (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8
CMF C2 H8 O2 Si



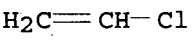
CM 2

CRN 75-21-8
CMF C2 H4 O

IT **9002-86-2**, **Polyvinyl** chloride **9002-88-4**,
Polyethylene 9003-05-8, POlyacrylamide
RL: TEM (Technical or engineered material use); USES (Uses)
(magnesium-based primary and secondary batteries)
RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-01-4
CMF C2 H3 Cl

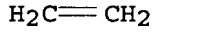


RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

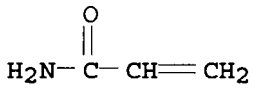
CRN 74-85-1
CMF C2 H4



RN 9003-05-8 HCAPLUS
CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1
CMF C3 H5 N O



RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:566291 HCAPLUS
DN 131:172705
TI Ion conductive matrixes and their use in electrochemical devices
IN Peled, Emanuel; Duvdevani, Tair; Melman, Avi
PA Ramot University Authority for Applied Research & Industrial Development, Israel
SO PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9944245	A1	19990902	WO 1999-IL109	19990222
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
IL 123419	A1	20001206	IL 1998-123419	19980224
IL 126830	A1	20010520	IL 1998-126830	19981030
CA 2320696	AA	19990902	CA 1999-2320696	19990222
AU 9926369	A1	19990915	AU 1999-26369	19990222
EP 1066656	A1	20010110	EP 1999-906424	19990222
R: DE, ES, FR, GB, IT, NL, SE				
JP 2002505506	T2	20020219	JP 2000-533910	19990222
US 6811911	B1	20041102	US 2000-622676	20001018

PRAI IL 1998-123419 A 19980224
IL 1998-126830 A 19981030
WO 1999-IL109 W 19990222

AB The present invention provides an ion conducting matrix comprising: (i) 5 to 60% by volume of an inorg. powder having a good aqueous electrolyte absorption capacity, (ii) 5 to 50% by volume of a polymeric binder that is chemical compatible with an aqueous electrolyte, and (iii) 10 to 90% by volume of an aqueous electrolyte, wherein the inorg. powder comprises essentially sub-micron particles. The present invention further provides a membrane being a film made of the matrix of the invention and a composite electrode comprising 10 to 70% by volume of the matrix of the invention.

IC ICM H01M004-58
ICS H01M006-14; H01M006-18; H01M006-16; H01M004-86; H01M004-62; H01M004-34; H01M004-32; H01M004-50; H01M004-42; H01M006-00; C25B011-04; C25B013-00; C25B009-00; C08J005-20; B23P019-00
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 72, 76
ST battery ion conductive matrix; capacitor ion conductive matrix

IT Primary batteries
(Zn-air; ion conductive matrixes and their use in electrochem. devices)

IT Carboxylic acids, uses
RL: MOA (Modifier or additive use); USES (Uses)
(aliphatic, esters, lubricants; ion conductive matrixes and their use in electrochem. devices)

IT Carboxylic acids, uses
RL: MOA (Modifier or additive use); USES (Uses)
(aromatic, esters, lubricants; ion conductive matrixes and their use in electrochem. devices)

IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; ion conductive matrixes and their use in electrochem. devices)

IT Carboxylic acids, uses
RL: MOA (Modifier or additive use); USES (Uses)
(dicarboxylic, aliphatic, esters, lubricants; ion conductive matrixes and their use in electrochem. devices)

IT Carboxylic acids, uses
RL: MOA (Modifier or additive use); USES (Uses)
(dicarboxylic, aryl, esters, lubricants; ion conductive matrixes and their use in electrochem. devices)

IT Capacitors
(double layer; ion conductive matrixes and their use in electrochem. devices)

IT Hydrocarbons, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fluoro, lubricants; ion conductive matrixes and their use in electrochem. devices)

IT Fuel cells
Membranes, nonbiological
(ion conductive matrixes and their use in electrochem. devices)

IT Metalloporphyrins
Oxides (inorganic), uses
RL: CAT (Catalyst use); USES (Uses)
(ion conductive matrixes and their use in electrochem. devices)

IT Lubricants
(liquid; ion conductive matrixes and their use in electrochem. devices)

IT Hydrocarbons, uses
Polysiloxanes, uses
RL: MOA (Modifier or additive use); USES (Uses)

(lubricants; ion conductive matrixes and their use in electrochem. devices)

IT **Polysulfones**, uses
Polysulfones, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**polyamide**-, binder; ion conductive matrixes and their use in electrochem. devices)

IT Binders
(polymer; ion conductive matrixes and their use in electrochem. devices)

IT **Polyamides**, uses
Polyamides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**polysulfone**-, binder; ion conductive matrixes and their use in electrochem. devices)

IT Electrolytic cells
(water; ion conductive matrixes and their use in electrochem. devices)

IT **7429-90-5**, Aluminum, uses 7440-43-9, Cadmium, uses
7440-66-6, Zinc, uses
RL: DEV (Device component use); USES (Uses)
(**anodes**; ion conductive matrixes and their use in electrochem. devices)

IT 9002-84-0 **9002-86-2**, **Pvc 9003-05-8**,
Polyacrylamide 9011-14-7, Pmma 9011-17-0, **Polyvinylidene** fluoride hexafluoropropylene 24937-79-9 24981-14-4, **Polyvinyl** fluoride 25014-41-9, Polyacrylonitrile
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; ion conductive matrixes and their use in electrochem. devices)

IT 1313-13-9, Manganese dioxide, uses 20667-12-3, Silver oxide
55070-72-9, Nickel hydroxide oxide
RL: DEV (Device component use); USES (Uses)
(cathodes; ion conductive matrixes and their use in electrochem. devices)

IT 1314-35-8, Tungsten oxide, uses 12036-10-1, Ruthenium dioxide
RL: DEV (Device component use); USES (Uses)
(electrode; ion conductive matrixes and their use in electrochem. devices)

IT 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses
RL: DEV (Device component use); USES (Uses)
(electrodes; ion conductive matrixes and their use in electrochem. devices)

IT 7439-96-5, Manganese, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-33-7, Tungsten, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses
RL: CAT (Catalyst use); USES (Uses)
(ion conductive matrixes and their use in electrochem. devices)

IT 354-88-1, Ethanesulfonic acid, pentafluoro- 375-73-5, Nonafluorobutanesulfonic acid 423-41-6 1493-13-6 2706-91-4, 1-Pentanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,5-undecafluoro- 14970-71-9, Dithionic acid 40856-11-9 41062-44-6 56344-03-7 82727-18-2
RL: DEV (Device component use); USES (Uses)
(ion conductive matrixes and their use in electrochem. devices)

IT 1303-86-2, Boron oxide b2o3, uses 1314-23-4, Zirconia, uses 1344-28-1, Aluminum oxide (Al2O3), uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(ion conductive matrixes and their use in electrochem. devices)

IT 10043-35-3, Boric acid (H3BO3), uses 12651-23-9, Titanium hydroxide 12713-25-6, Zirconium hydroxide oxide 12738-89-5, Titanium hydroxide

oxide 14475-63-9, Zirconium hydroxide 21645-51-2, Aluminum hydroxide, uses 24623-77-6, Aluminum hydroxide oxide
RL: MOA (Modifier or additive use); USES (Uses)
(ion conductive matrixes and their use in electrochem. devices)

IT 67-64-1, 2-Propanone, uses 68-12-2, uses 78-93-3, Ethyl methyl ketone, uses 84-66-2, Diethyl phthalate 84-74-2, Dibutyl phthalate 96-48-0 96-49-1, Ethylene carbonate 102-76-1, Glycerol triacetate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 108-94-1, Cyclohexanone, uses 109-99-9, uses 110-12-3, Isoamyl methyl ketone 110-71-4 120-92-3, Cyclopentanone 127-19-5, Dimethyl acetamide 131-11-3, Dimethyl phthalate 616-38-6, Dimethyl carbonate 872-50-4, n-Methylpyrrolidone, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(ion conductive matrixes and their use in electrochem. devices)

IT 124-18-5, Decane 238407-65-3, Yivac 06/6
RL: MOA (Modifier or additive use); USES (Uses)
(lubricant; ion conductive matrixes and their use in electrochem. devices)

IT 7664-38-2D, Phosphoric acid, ester, uses
RL: MOA (Modifier or additive use); USES (Uses)
(lubricants; ion conductive matrixes and their use in electrochem. devices)

IT **7429-90-5**, Aluminum, uses **7440-66-6**, Zinc, uses
RL: DEV (Device component use); USES (Uses)
(**anodes**; ion conductive matrixes and their use in electrochem. devices)

RN 7429-90-5 HCAPLUS
CN Aluminum (8CI, 9CI) (CA INDEX NAME)

Al

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT **9002-86-2**, **Pvc 9003-05-8**, Polyacrylamide
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; ion conductive matrixes and their use in electrochem. devices)

RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

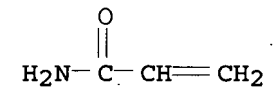
CRN 75-01-4
CMF C2 H3 Cl

$H_2C{=}CH{-}Cl$

RN 9003-05-8 HCAPLUS
CN 2-Propenamide, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 79-06-1
CMF C3 H5 N O



RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:585324 HCAPLUS
DN 129:218983
TI Bipolar lead-acid battery plates
IN Grosvenor, Victor L.; Pinsky, Naum
PA USA
SO U.S., 9 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5800946	A	19980901	US 1996-761781	19961206
	US 6077623	A	20000620	US 1998-96849	19980611
PRAI	US 1996-761781	A3	19961206		

AB Electrodes, especially useful in bipolar plates of Pb-acid batteries, include a metal-containing substrate, an elec. conductive material secured to the 1st side of the substrate, an elec. conductive **layer** including a **polymer** secured to the **2nd** side of the substrate, and a **metallic layer** secured to the elec. conductive layer so that the elec. conductive layer is located between the **metallic layer** and the substrate. Bipolar plates are provided and include an elec. conductive electrode element, a grid spaced apart from the electrode in proximity to the 1st side of the electrode element, pos. active material in contact with the 1st side or 2nd side of the **electrode** element and **neg.** active material in contact with the 2nd side or 1st side of the electrode element which is not in contact with the pos. active material.

IC ICM H01M010-18
INCL 429210000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST lead acid battery bipolar plate; electrode bipolar lead acid battery
IT Acrylic polymers, uses
Polycarbonates, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(in manufacture of bipolar lead-acid battery plates)
IT Battery electrodes
(manufacture of bipolar lead-acid)
IT 7440-32-6, Titanium, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(in manufacture of bipolar lead-acid battery plates)
IT 18282-10-5DP, Tin dioxide, fluorine-doped
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)

(in manufacture of bipolar lead-acid battery plates)
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1995:470158 HCAPLUS
DN 122:218560
TI High performance lithium or zinc secondary batteries with film-coated **anodes**
IN Kawakami, Soichiro; Mishina, Shinya; Kobayashi, Naoya
PA Canon K. K., Japan
SO Eur. Pat. Appl., 88 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 600718	A2	19940608	EP 1993-309571	19931130
	EP 600718	A3	19951115		
	EP 600718	B1	20000426		
	R: CH, DE, FR, GB, IT, LI				
	JP 06168737	A2	19940614	JP 1992-320557	19921130
	JP 2943127	B2	19990830		
	JP 06168721	A2	19940614	JP 1992-320558	19921130
	JP 3067426	B2	20000717		
	JP 06168739	A2	19940614	JP 1992-320559	19921130
	JP 2771406	B2	19980702		
	JP 06168715	A2	19940614	JP 1992-320560	19921130
	JP 3487556	B2	20040119		
	JP 06196199	A2	19940715	JP 1992-344563	19921224
	JP 3423338	B2	20030707		
	JP 06283157	A2	19941007	JP 1993-78342	19930405
	JP 3530544	B2	20040524		
	CA 2110097	AA	19940531	CA 1993-2110097	19931126
	CA 2110097	C	20020709		
	CA 2331602	AA	19940531	CA 1993-2331602	19931126
	CA 2331602	C	20020910		
	AU 9352003	A1	19940609	AU 1993-52003	19931129
	EP 809314	A2	19971126	EP 1997-200434	19931130
	EP 809314	A3	19981014		
	R: CH, DE, FR, GB, IT, LI				
	US 5824434	A	19981020	US 1993-159141	19931130
	US 6391492	B1	20020521	US 1995-482569	19950607
	AU 9726133	A1	19970828	AU 1997-26133	19970619
	AU 715180	B2	20000120		
	US 6207326	B1	20010327	US 1997-980055	19971126
	US 6395423	B1	20020528	US 1998-163545	19980930
	US 2002031701	A1	20020314	US 2001-879227	20010613
	US 7081320	B2	20060725		
PRAI	JP 1992-320557	A	19921130		
	JP 1992-320558	A	19921130		
	JP 1992-320559	A	19921130		
	JP 1992-320560	A	19921130		
	JP 1992-344563	A	19921224		
	JP 1993-78342	A	19930405		
	JP 1992-245321	A	19920914		
	JP 1992-245322	A	19920914		
	JP 1992-245323	A	19920914		
	JP 1992-245324	A	19920914		

	JP 1992-245325	A	19920914
	JP 1992-245326	A	19920914
	JP 1993-13721	A	19930129
	CA 1993-2110097	A3	19931126
	EP 1993-309571	A3	19931130
	US 1993-159141	A3	19931130
	US 1995-482569	A3	19950607
	US 1998-163545	A3	19980930

AB The secondary battery with long cycle life has a Li or **Zn** **anode** activating material, electrolytic solution, a separator, cathode activating material, a collecting electrode and a battery case, where the surface of the **anode** is covered with a film having a structure which allows ions relating to the battery reactions to pass through. Since growth of dendrite of Li or Zn at the time of the charge can be prevented, short circuit between the **anode** and cathode can be prevented. A Li battery, Ni-Zn battery, air-Zn battery, Br-Zn battery and AgO-Zn battery are described.

IC ICM H01M010-40
ICS H01M010-24; H01M004-24; H01M004-02; H01M002-14; H01M004-36

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST secondary battery high performance; lithium secondary battery high performance; zinc secondary battery high performance; **anode** film high performance battery

IT Batteries, secondary
(Li, Ni-Zn, air-Zn, Br-Zn, AgO-Zn; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Porphyrins
RL: DEV (Device component use); USES (Uses)
(cathode insulating film; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Fluoropolymers
Siloxanes and Silicones, uses
RL: DEV (Device component use); USES (Uses)
(cathode; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Carbon fibers, uses
RL: DEV (Device component use); USES (Uses)
(conductive layer; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Carbides
Fluorides, uses
Halides
Nitrides
RL: DEV (Device component use); USES (Uses)
(electrodes; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Aromatic hydrocarbons, uses
RL: DEV (Device component use); USES (Uses)
(insulating film, polymers; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Cryptands
RL: DEV (Device component use); USES (Uses)
(insulating film; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Glass, oxide
RL: DEV (Device component use); USES (Uses)
(insulating layer; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Polyamines

Polyethers, uses
Sulfides, uses
RL: DEV (Device component use); USES (Uses)
(ring, insulating film; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Thiols, uses
RL: DEV (Device component use); USES (Uses)
(crown ether, insulating film; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Crown compounds
RL: DEV (Device component use); USES (Uses)
(cryptands, insulating film; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Crown compounds
RL: DEV (Device component use); USES (Uses)
(ether imines, insulating film; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Crown compounds
RL: DEV (Device component use); USES (Uses)
(ethers, thiol, insulating film; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Crown compounds
RL: DEV (Device component use); USES (Uses)
(imines, insulating film; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Polyethers, uses
RL: DEV (Device component use); USES (Uses)
(thio-, ring, insulating film; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT Lithium alloy, base
Zinc alloy, base
RL: DEV (Device component use); USES (Uses)
(**anode**; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 28406-56-6, Poly(2-vinylnaphthalene) 29659-51-6, Poly(9-Vinylanthracene)
RL: DEV (Device component use); USES (Uses)
(**anode** film; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 1314-13-2, Zinc oxide, uses 7439-93-2, Lithium, uses **7440-66-6**, Zinc, uses **25038-71-5**, Ethylene-tetrafluoroethylene copolymer **25791-89-3 26702-40-9 27120-35-0** 28212-48-8, Polydiphenoxyphosphazene 28212-50-2, Polybis(trifluoroethoxy)phosphazene 37626-13-4 94667-38-6 111093-02-8, Tirano coat **153315-80-1** 162036-42-2 **162036-43-3** 162036-44-4 162036-45-5 **162036-46-6** 162036-49-9
RL: DEV (Device component use); USES (Uses)
(**anode**; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 50-32-8D, Benzopyrene, polymers 85-01-8D, Phenanthrene, polymers 91-20-3D, Naphthalene, polymers 92-24-0D, Naphthacene, polymers 120-12-7D, Anthracene, polymers 129-00-0D, Pyrene, polymers 190-26-1D, Ovalene, polymers 191-07-1D, Coronene, polymers 213-46-7D, Picene, polymers 217-59-4D, Triphenylene, polymers 539-52-6D, Perillene, polymers 574-93-6, Phthalocyanine 1335-25-7, Lead oxide 12619-70-4, Cyclodextrin
RL: DEV (Device component use); USES (Uses)
(cathode insulating film; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 1314-62-1, Vanadium oxide (V2O5), uses 7429-90-5, Aluminum, uses

7439-92-1, Lead, uses 7439-95-4, Magnesium, uses 7440-09-7, Potassium, uses 7440-23-5, Sodium, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-38-2, Arsenic, uses 7440-39-3, Barium, uses 7440-42-8, Boron, uses 7440-69-9, Bismuth, uses 7440-70-2, Calcium, uses 7440-74-6, Indium, uses 7723-14-0, Phosphorus, uses **9002-88-4 9003-07-0**, Polypropene 12054-48-7, Nickel hydroxide 12209-58-4, Molybdenum vanadium oxide 39300-70-4, Lithium nickel oxide 39457-42-6, Lithium manganese oxide 120479-28-9, Cobalt copper lithium oxide 131344-56-4, Cobalt Lithium nickel oxide 152654-50-7, Cobalt iron lithium oxide
RL: DEV (Device component use); USES (Uses)
(cathode; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 7440-02-0, Nickel, uses 7440-06-4, Platinum, uses 7440-21-3, Silicon, uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses
RL: DEV (Device component use); USES (Uses)
(conductive layer; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 12673-92-6, Titanium sulfide **25498-03-7** 162036-47-7 162036-48-8 **162036-50-2**
RL: DEV (Device component use); USES (Uses)
(high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 75-73-0, Carbon tetrafluoride 1333-74-0, Hydrogen, uses 7440-37-1, Argon, uses 7440-59-7, Helium, uses 7440-63-3, Xenon, uses 7647-01-0, Hydrochloric acid, uses 7664-39-3, Hydrofluoric acid, uses 7664-41-7, Ammonia, uses 7727-37-9, Nitrogen, uses 7782-41-4, Fluorine, uses 7782-44-7, Oxygen, uses 7782-50-5, Chlorine, uses 7783-54-2, Nitrogen trifluoride
RL: NUU (Other use, unclassified); USES (Uses)
(plasma **anode** treatment agent; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT 1305-78-8, Calcium oxide, uses 1309-48-4, Magnesium oxide (MgO), uses 1310-53-8, Germanium oxide, uses 1312-43-2, Indium oxide 1314-23-4, Zirconia, uses 1332-29-2, Tin oxide 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 11118-57-3, Chrome oxide 12640-89-0, Selenium oxide 13463-67-7, Titania, uses
RL: DEV (Device component use); USES (Uses)
(separator; high performance lithium or zinc secondary batteries with film-coated **anodes**)

IT **7440-66-6**, Zinc, uses **25038-71-5**, Ethylene-tetrafluoroethylene copolymer **25791-89-3 26702-40-9 27120-35-0 153315-80-1 162036-43-3 162036-46-6**
RL: DEV (Device component use); USES (Uses)
(**anode**; high performance lithium or zinc secondary batteries with film-coated **anodes**)

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

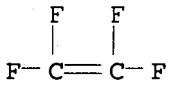
Zn

RN 25038-71-5 HCAPLUS
CN Ethene, tetrafluoro-, polymer with ethene (9CI) (CA INDEX NAME)

CM 1

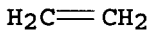
CRN 116-14-3

CMF C2 F4

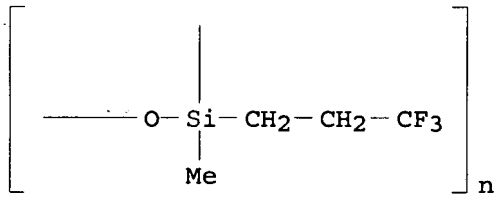


CM 2

CRN 74-85-1
CMF C2 H4



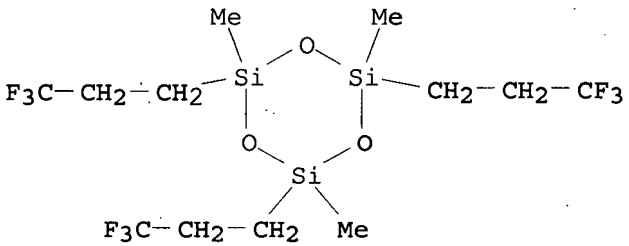
RN 25791-89-3 HCAPLUS
CN Poly[oxy[methyl(3,3,3-trifluoropropyl)silylene]] (8CI, 9CI) (CA INDEX NAME)



RN 26702-40-9 HCAPLUS
CN Cyclotrisiloxane, 2,4,6-trimethyl-2,4,6-tris(3,3,3-trifluoropropyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 2374-14-3
CMF C12 H21 F9 O3 Si3

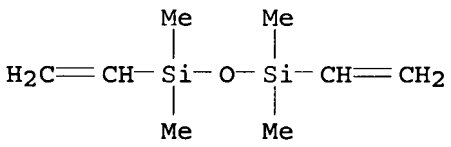


RN 27120-35-0 HCAPLUS
CN Disiloxane, 1,3-diethenyl-1,1,3,3-tetramethyl-, homopolymer (9CI) (CA INDEX NAME)

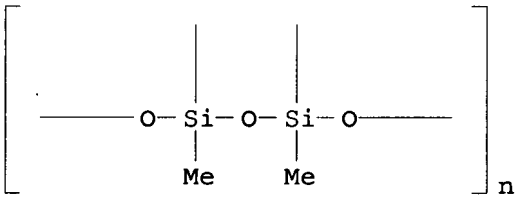
CM 1

CRN 2627-95-4

CMF C8 H18 O Si2



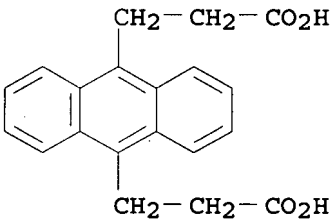
RN 153315-80-1 HCAPLUS
CN Poly[(1,3-dimethyl-1,3:1,3-disiloxanediylidene)-1,3-bis(oxy)] (9CI) (CA INDEX NAME)



RN 162036-43-3 HCAPLUS
CN 9,10-Anthracenedipropanoic acid, polymer with 1,2-ethanediol (9CI) (CA INDEX NAME)

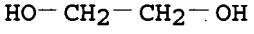
CM 1

CRN 71367-28-7
CMF C20 H18 O4



CM 2

CRN 107-21-1
CMF C2 H6 O2

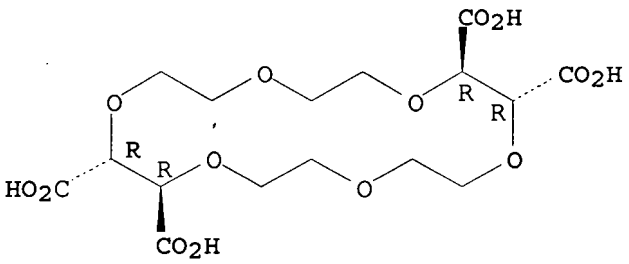


RN 162036-46-6 HCAPLUS
CN 1,4,7,10,13,16-Hexaoxacyclooctadecane-2,3,11,12-tetracarboxylic acid, [2R-(2R*,3R*,11R*,12R*)]-, polymer with 1,4-butanediol and 1,3-diisocyanatomethylbenzene (9CI) (CA INDEX NAME)

CM 1

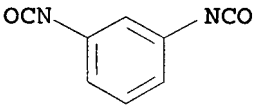
CRN 61696-54-6
CMF C16 H24 O14

Absolute stereochemistry. Rotation (+).



CM 2

CRN 26471-62-5
CMF C9 H6 N2 O2
CCI IDS



D1— Me

CM 3

CRN 110-63-4
CMF C4 H10 O2

HO— $(CH_2)_4$ — OH

IT **9002-88-4 9003-07-0**, Polypropene
RL: DEV (Device component use); USES (Uses)
(cathode; high performance lithium or zinc secondary batteries with film-coated **anodes**)
RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

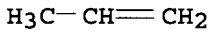
CRN 74-85-1
CMF C2 H4

$H_2C{=}CH_2$

RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

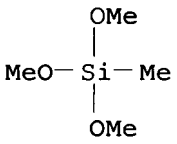
CRN 115-07-1
CMF C3 H6



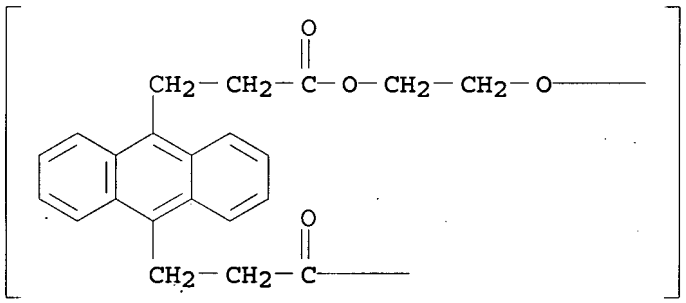
IT **25498-03-7 162036-50-2**
RL: DEV (Device component use); USES (Uses)
(high performance lithium or zinc secondary batteries with film-coated **anodes**)
RN 25498-03-7 HCAPLUS
CN Silane, trimethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1185-55-3
CMF C4 H12 O3 Si



RN 162036-50-2 HCAPLUS
CN Poly[oxy-1,2-ethanediyloxy(1-oxo-1,3-propanediyl)-9,10-anthracenediyl(3-oxo-1,3-propanediyl)] (9CI) (CA INDEX NAME)



L36 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1994:413959 HCAPLUS
DN 121:13959
TI Zinc **anode** for alkaline storage battery
IN Suga, Masanobu; Akita, Seiichi; Kuroda, Nobuyuki
PA Nippon Oil Co., Ltd., Japan
SO Can. Pat. Appl., 32 pp.
CODEN: CPXXEB

DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 2101872	AA	19940208	CA 1993-2101872	19930804
	JP 06060871	A2	19940304	JP 1992-251812	19920807
	JP 06060876	A2	19940304	JP 1992-255323	19920812
	US 5382482	A	19950117	US 1993-99174	19930729
	EP 584987	A1	19940302	EP 1993-306208	19930805
	EP 584987	B1	19981028		
	R: DE, FR, GB				
PRAI	JP 1992-251812	A	19920807		
	JP 1992-255323	A	19920812		

AB A **Zn anode** for an alkaline storage battery comprises an electrode using Zn as active material and a polymer layer which is substantially in direct contact with the electrode, the polymer layer containing ≥1 polymer having a crosslinked structure, for use in an alkaline storage battery in which the occurrence of dendrite and shape change is suppressed. The polymer is selected from a polymer A (e.g., **polyvinyl** alc.) with ion conductivity 10-3 to 10 S/cm in alkali electrolyte, crosslinked polymer A, a polymer A' obtained by introducing a group B (e.g., CH2CH(CH3)2) into a portion of a main chain of polymer A to improve gas permeability, a polymer C (e.g., polyorganosiloxane) having an O permeability constant of >10-10 cm3 STP cm-1s-1cmHg-1, crosslinked polymer C, and a polymer C' obtained by introducing a group D (e.g., COOH) into a portion of a main chain of polymer C to improve ion conductivity

IC ICM H01M004-24
ICS H01M004-26

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST zinc **anode** alk secondary battery

IT **Polysulfones**, uses
RL: USES (Uses)
(crosslinked, zinc **anodes** containing, for alkaline batteries)

IT **Anodes**
(battery, zinc, for alkaline secondary batteries)

IT Siloxanes and Silicones, uses
RL: USES (Uses)
(crosslinked, zinc **anodes** containing, for alkaline batteries)

IT Polyamines
RL: USES (Uses)
(**polyethylene**-, N-acyl, crosslinked, zinc **anodes** containing, for alkaline batteries)

IT Polymers, uses
RL: USES (Uses)
(polyparabanic acids, crosslinked, zinc **anodes** containing, for alkaline batteries)

IT **7440-66-6**, Zinc, uses
RL: DEV (Device component use); USES (Uses)
(**anodes**, for alkaline batteries)

IT 79-10-7D, 2-Propenoic acid, esters, polymers, crosslinked 79-41-4D, esters, polymers, crosslinked 116-14-3, Tetrafluoroethylene, uses 1314-13-2, Zinc oxide, uses 9002-89-5D, **Polyvinyl** alcohol, crosslinked 9003-01-4D, Polyacrylic acid, crosslinked 9003-39-8D, **Polyvinylpyrrolidone**, crosslinked **9004-32-4D**, Carboxymethyl cellulose, crosslinked 9080-79-9D, Sodium polystyrenesulfonate, crosslinked 25014-41-9D, Polyacrylonitrile, crosslinked **25068-26-2D**, Poly(4-methylpentene-1), crosslinked 25087-26-7D, Polymethacrylic acid, crosslinked 25322-68-3D, crosslinked

155827-15-9 155827-16-0 155827-17-1
RL: USES (Uses)
(zinc **anodes** containing, for alkaline batteries)

IT **7440-66-6**, Zinc, uses
RL: DEV (Device component use); USES (Uses)
(**anodes**, for alkaline batteries)

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT **9004-32-4D**, Carboxymethyl cellulose, crosslinked
25068-26-2D, Poly(4-methylpentene-1), crosslinked
155827-15-9 155827-16-0
RL: USES (Uses)
(zinc **anodes** containing, for alkaline batteries)

RN 9004-32-4 HCAPLUS
CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

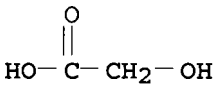
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

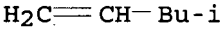
CRN 79-14-1
CMF C2 H4 O3



RN 25068-26-2 HCAPLUS
CN 1-Pentene, 4-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

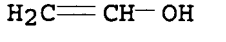
CRN 691-37-2
CMF C6 H12



RN 155827-15-9 HCAPLUS
CN Ethenol, polymer with diethoxydimethylsilane (9CI) (CA INDEX NAME)

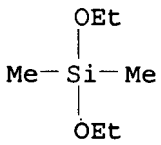
CM 1

CRN 557-75-5
CMF C2 H4 O



CM 2

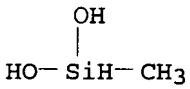
CRN 78-62-6
CMF C6 H16 O2 Si



RN 155827-16-0 HCAPLUS
CN 3-Butenoic acid, polymer with dimethylsilanediol, 1-heptene and methylsilanediol, graft (9CI) (CA INDEX NAME)

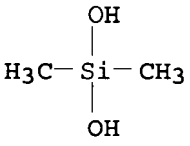
CM 1

CRN 43641-90-3
CMF C H6 O2 Si



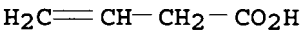
CM 2

CRN 1066-42-8
CMF C2 H8 O2 Si



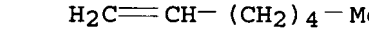
CM 3

CRN 625-38-7
CMF C4 H6 O2



CM 4

CRN 592-76-7
CMF C7 H14



L36 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1986:210035 HCAPLUS
DN 104:210035
TI Air cathode
IN Tsuruta, Shinji; Suzuki, Nobukazu
PA Toshiba Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 60253161	A2	19851213	JP 1984-108562	19840530
PRAI JP 1984-108562		19840530		

AB An air cathode consists of a porous electrode body that can electrochem. reduce O and acts as current collector, and an O-selective permeable membrane of a sintered ultrafine metal powder and a fluoropolymer. The electrode prevents penetration of air moisture and increases the battery storage stability and discharge performance under heavy load. Thus, an air cathode was prepared from a Raney Ni body and FEP membrane containing 5% ultrafine Sn powder. Membrane thickness was 0.5μ, and its O to H2O vapor permeability ratio was 2.0:1. A battery constructed from the cathode, a gelled **Zn**-3% Hg **anode**, KOH electrolyte, and a **polyamide** separator showed a high discharge stability, due to preservation of the cathode working condition, vs. batteries using cathodes with membranes of PTFE containing active carbon, with or without CaCl2, or of **polysiloxane** containing Pd.

IC ICM H01M004-86
ICS G01N027-30
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST cathode air oxygen permeable membrane; battery cathode oxygen permeable membrane; tin FEP membrane oxygen cathode
IT Cathodes
(battery, catalytic, nickel-air, with oxygen-permeable FEP membrane containing tin)
IT 7440-31-5, uses and miscellaneous
RL: USES (Uses)
(cathodes with FEP film containing, nickel-air catalytic, for fuel cells)
IT 7429-90-5, uses and miscellaneous 7439-89-6, uses and miscellaneous
7440-48-4, uses and miscellaneous 7440-50-8, uses and miscellaneous
RL: USES (Uses)
(cathodes with polymer film containing, nickel-air catalytic, for fuel cells)
IT 9002-84-0 25067-11-2
RL: USES (Uses)
(cathodes with ultrafine metal powder-containing film of, nickel-air catalytic, for fuel cells)
IT 7782-44-7, uses and miscellaneous
RL: USES (Uses)

(cathodes, nickel catalytic, with FEP permeable membrane containing tin, for fuel cells)
IT 7440-02-0, uses and miscellaneous
RL: USES (Uses)
(cathodes, oxygen catalytic, with FEP permeable membrane containing tin, for fuel cells)

L36 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1978:549474 HCAPLUS
DN 89:149474
TI Zinc alkaline secondary batteries
IN Ikeda, Hiroshi; Yokoyama, Takao; Inaba, Yoshihisa; Kumano, Yasuyuki
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53050450	A2	19780508	JP 1976-125334	19761018
	JP 55025464	B4	19800705		
PRAI	JP 1976-125334	A	19761018		

AB Zn alkaline batteries contain a ZnO-**Zn anode.** The **anode** contains an inorg. substance (**Si**) and a **polymer** which expands on absorption of an alkaline electrolyte. The polymer is **polyacetal**, polyacrylate, polyphenylene oxide vinyl butyral polymer, or **polyester.** Thus, a **Zn** alkaline-battery **anode** consisted of a **Cu** mesh collector, a powdered ZnO-Zn mixture, polyacrylate, Si, and poly(vinyl alc.). The number of charge-discharge cycles for a battery using the **anode** was .apprx.320 vs. .apprx.170 for a battery with an **anode** not containing **Si.**
IC H01M004-62
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST zinc alk battery **anode**; silicon zinc battery **anode**
IT **Anodes**
(battery, silicon-containing zinc, alkaline-)
IT Batteries, secondary
(zinc alkaline)
IT 7440-21-3, uses and miscellaneous
RL: USES (Uses)
(**anodes** containing, zinc alkaline-battery)
IT **7440-66-6**, uses and miscellaneous
RL: USES (Uses)
(**anodes**, silicon-containing alkaline-battery)
IT **7440-66-6**, uses and miscellaneous
RL: USES (Uses)
(**anodes**, silicon-containing alkaline-battery)
RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

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